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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,712	08/23/2001	Chantal Roth	NADIL.028A	1780

7590 08/23/2004	EXAMINER
ARIES A. TAYLOR, JR. JENKINS, WILSON & TAYLOR, P.A. 3100 TOWER BOULEVARD SUITE 1400 UNIVERSITY TOWER DURHAM,, NC 27707	TRAN, QUOC A

ART UNIT	PAPER NUMBER
2176	

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 August 2001</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-19* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a)☐ All b)☐ Some * c)☐ None of:
  1.☐ Certified copies of the priority documents have been received.
  2.☐ Certified copies of the priority documents have been received in Application No. _____.
  3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to application filed 08/23/2001.

2.   Claims 1-19 are currently pending in this application. Claims 1, 13, and 19 are

independent claims.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

7.   **Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Chang et al. US Patent No. 6,584,459 B1 issued 06/24/2003 filed 06/02/1999

(hereinafter '459), in view of Sabatini et al. US Patent No. 5,970,500 issued

10/19/1999 filed 05/15/1997 (hereinafter '500).

In regard to independent claim 13, "...receiving data in a transitional format;

... converting said data into a database-compatible language; ... storing said database

compatible language in a ... data warehouse", as taught by '459 at col. 6, line 55

through col. 7, line 65 (i.e..... Database Services module 708, which retrieves or

receives the SQL statements and then derives or synthesizes instructions from the

SQL statements for execution by the computer system 702 ... ... may be loaded from

the data storage devices 704 into a memory of the computer system 702 for use

during actual operations... The UDFs 144 convert XML files into a storage format with

predefined attribute values, storing XML documents internally within the DB2.RTM.

database 300 or externally within the file system 500. After integrating XML documents

into the database system (i.e..... data warehouse));

'459 does not explicitly teach, "... *a biological data warehouse...* ", however, as

taught by '500 at col. 2, lines 5-10 (i.e. The present invention provides relational

database systems for storing and analyzing biomolecular sequence information together

with biological annotations detailing the source and interpretation of the sequence

data...).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the teaching of '459 that including a biological data relational to

database system for storing and displaying genetic information. One of ordinary skill

would be motivated to perform such a modification to save search time of the complex

biological database, and enabling the researchers to utilized computer resources to

explore any biological database, which is storing biological data such as, nucleic acid

sequence information, and protein sequence, structure and function from DNA

sequence data, for organisms such as Eschericia coli, Haemophilus influenzae,

Mycoplasma genitalium, and Mycoplasma pneumoniae, among others..., as taught

by '500 at col. 1, lines 25-60 (i.e..... to search database quickly...).

In regard to dependent claim 14, "*mapping information into the formatted data*",
as taught by '459 at col. 14, lines 38-45 55 (i.e..... In a DTD bounded indexing
mechanism, the XML column is mapped to one DTD...).

In regard to dependent claim 15, "*mapping information is a mapping file*", as
taught by '459 at col. 14, lines 38-45 (i.e..... mapped to one DTD. The DTD must be in
the XML_DTD_REF table and application should get the DTDid before the index is
created. Therefore, prior to indexing, the XML extender must: a) Parse the DTD and
generate its internal tree structure, and b) Store DTD data into the XML_DTD_REF
table...).

In regard to dependent claim 16, "*mapping information is embedded within said
transitional formatted data*", as taught by '459 at col. 14, lines 38-45 (i.e..... mapped to
one DTD. The DTD must be in the XML_DTD_REF table and application should get the
DTDid before the index is created. Therefore, prior to indexing, the XML extender must:
a) Parse the DTD and generate its internal tree structure...).

In regard to dependent claim 17, "*transitional format comprises extensible
markup language definitions*", as taught by '459 at col. 8, lines 10-35 (i.e..... provides
indexing of the XML documents stored within the DB2.RTM. database 300 or in the
external file system 500. The XML extender 100 performs key transformations on
indices provided by the DB2.RTM. database 300, creating an index that supports
structural queries....the XML extender 100. In step S1, the DB2.RTM. database is
enabled, while in step S2, an abstract data type ADT, user defined functions UDFs, a

DTD reference table and an internal registration table are created and user privileges

are granted ...).

In regard to dependent claim 18, *"database-compatible language comprises*

SQL statements", as taught by '459 at col. 7, lines 60-67 (i.e..... the UDFs 144 may be

included in SQL statements to describe properties of XML documents via DB2XML

attribute values...).

In regard to claims 1, 5 and 19, are directed to a system for performing the

method of claim 13, and are similarly rejected along the same rationale.

In regard to dependent claims 2, and 4, are directed to a system for performing

the method of claim 17, and are similarly rejected along the same rationale.

In regard to dependent claim 6, is directed to a system for performing the

method of claim 18, and is similarly rejected along the same rationale.

In regard to dependent claim 3, *"wherein the markup language transforms said*

data entries into an application and platform-independent form", as taught by '459 at col.

1, lines 60-67 (i.e..... (XML), which is a subset of Standard Generalized Markup

Language (SGML), has been proposed to the World Wide Web Consortium (W3C) as

the next standard format. XML is a meta language, allowing a user to design a

customized markup language for many classes of structured documents (i.e.

independent platform of markup language transforms...).

In regard to dependent claim 7, *"a graph generator for generating a data*

warehouse graph", as taught by '459 at Abstract (i.e..... created B+ tree index

structures implemented in the database system to support the indexes...).

In regard to dependent claim 8, *"wherein said data warehouse graph is used to represent the schema of said data warehouse, wherein said data entries may be processed in a logical order",* as taught by '459 at Abstract (i.e..... created B+ tree index structures implemented in the database system to support the indexes...).

In regard to dependent claim 9, *"a data verifier for comparing said data entries with data present in said data warehouse",* as taught by '459, col. 23 line 60 through col. 24, line 5 (i.e..... One of the structural search queries used with the present invention refers to finding the XML documents containing certain terms in the specified structural path. Using the example illustrated above ... The function returns integer 1 if the document satisfies the search argument and otherwise returns a 0...).

In regard to dependent claim 10, *"wherein said data verifier is configured to populate incomplete data entries by retrieving the missing information from the data warehouse",* as taught by '459 at col. 22, lines 60-67 (i.e..... Update Attribute Values Individually...).

In regard to dependent claim 11, *"a key generator wherein primary and foreign database keys are created within said data warehouse",* as taught by '459 at col. 7, lines 40-55 (i.e..... The ADT (abstract data type) 142 is a relational facility introduced by DB2.RTM. Version 6 allowing the user to define new and distinct data types and subtypes to a database engine...version 6 ADT feature, a set of methods called accessor methods is automatically. Generated when DB2XML ADT 142 is created...).

In regard to dependent claim 12, *"file splitter for splitting large data files to facilitate easier loading of complex data files",* as taught by '459 at col. 9, lines 25-30

(i.e..... The content attribute is a character-based large object (CLOB) containing the

XML document if stType is XML_CLOB, and is null otherwise. The size attribute

represents the size of the XML document in term of bytes...), and also as taught by '459

at col. 9, lines 45-50 (DB2XML(DTDid int, stType int, fileName varchar(256), content

clob(10k), size int, creator varchar (20)...), and also as taught by '459 at col. 10, lines

345-50 (...for long XML documents, use of xmlFromFile( ) or xmlFromCLOB( ) is

recommended...).

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Chang et al   U.S. Patent No. 6,421,656 B1 issued 07/16/2002   filed 06/02/1999

Ellis et al   U.S. Patent No. 6,360,214 B1 issued 03/19/2002   filed 12/16/1998

Li et al   U.S. Patent No. 6,697,818 B2 issued 02/24/2004   filed 06/14/2001

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Quoc A. Tran whose telephone number is (703) 305-

8781, **"After mid-Oct, 2004, the examiner can be reach at (571) 272- 4103"**. The

examiner can normally be reached on Monday through Friday from 8:30AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Joseph H. Feild can be reached on (703) 305-9792. The fax phone number

for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

JOSEPH FEILD
SUPERVISORY PATENT EXAMINER

Quoc A. Tran

Patent Examiner

Technology Center 2176

August 16, 2004